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DR. COALE'S PRIZE DISSERTATION ON FRACTURES.

(Continued from page 57.)

THE remaining species of apparatus for fractured thigh, of which we have still to give the history, are both characterized by an attempt to encase the limb in a firm and unyielding covering, which shall maintain its influence unaltered by those circumstances which usually affect and impair other arrangements of bandages and splints.

The first of these is the "immovable apparatus," a name which brings a blush to the cheek of every man of true professional pride when he looks back to its history, and remembers the unphilosophical rage for its use so lately prevalent, and sees its present undeserved neglect. Nine years have elapsed since Seutin fully and methodically developed his plan. After that came about four years of wonderful cures; then for three years the journals teemed with cases of sphacelation—whole limbs dropping off from the use of the immovable apparatus. For the last two years it has scarcely been mentioned, and the surgeon of one of our large Southern hospitals lately told me that they rather prided themselves that tenotomy had never been performed or Seutin's apparatus applied in the institution to which he was attached.

By mere accident, whilst looking through an old volume entitled Medical and Surgical Observations, published in London in 1792, we came across a case related by Mr. Henry Yates Carter, in which he smeared an eighteen-tailed bandage with the white of an egg in treating a compound fracture of the leg. This seems to be the first immovable apparatus on record; but here it dropped until Larrey next took up the idea, which Seutin improved upon, until in 1836 the latter arrived at "the immovable apparatus."

Between the methods of Larrey and Seutin the differences are not great, and may be easily characterized. Larrey used a mixture of camphorated spirit, saturnine lotion and the white of an egg, for his "liquid agglutinative." Seutin uses starch, for which some of the more nice substitute dextrine. Larrey used the agglutinative liquid rather as an adjunct to a system of splints and bandages; whilst with Seutin's dressing, as with Beau Brummel's cravat, "starch is the man." Larrey used straw for splints and junk bags; Seutin pasteboard, and linen compresses. Both have the same object—to encase the limb in a stiff unyielding cover, but they differ in their estimate of the propriety and influence of this. Larrey praises the economy of time and material in

this dressing, and the *peculiar* facility it offers for transporting the patient; advantages much esteemed by an old "*militaire*." Where an external wound exists, so far from its being a contra-indication to its use, it rather recommends it, "for the effused pus will solidify the bandage"! "It soaks into the dressings, and when hard exerts a favorable pressure upon the wound, stopping the secretion, and also arresting the irritation caused by the swelling of the periosteum." But we must say we do not understand these views.

Seutin is much more discriminating, and in the Dublin Journal of Medical Science for November, 1842, will be found a very interesting account of his remarks during a visit to Stevens's Hospital of that city. He complains of being much misunderstood as to his estimate of the efficacy of the immovable apparatus—and that there is generally a great want of care in applying it—omitting the use of compresses and other protections against chafing, as fully necessary with it as with other bandages and splints. He thus advises how to apply it. "First apply a calico roller, moderately firm but without starch. After it is applied smear its outer surface with starch, and place pledgets of lint where pressure is to be avoided. If necessary, splints are to be arranged before another layer is put on, and this being done, they are to be surrounded with two or three other layers thoroughly starched. If a suppurating wound exists, it must be kept uncovered. Compression ought to stop at a gentle methodical pressure sufficient to moderate the afflux of blood, but not to stop it, as has been supposed by many, who thought in this way to prevent inflammation. Care should be taken not to starch the folds over joints or bony prominences, for fear of excoriation." Pastebord, a line and a half in thickness, is the material preferred by Seutin for splints. After the affair is perfectly dry, it is to be slit down its whole length in front, and it can then be opened and the limb inspected, while its own elasticity or a few tapes will keep it closed. Seutin invented a particular kind of stiff-bladed shears for slitting these bandages, but we have used with all convenience a grooved director, upon which we cut with a common large-bladed penknife—preferring that blade called the "Wharnccliffe," which has a thick, strong back; and the old-fashioned director, which has a handle at right angles to the groove.

We have thus given a sufficient insight into the nature and properties of the "immovable apparatus," as before, avoiding all unnecessary detail, and at the same time not omitting whatever would elucidate the principles involved.

The other apparatus having the same end as the last—the encasing of the limb in a firm and unyielding covering—is the plaster splint. This idea of using some quickly concretible substance originated among the Arabs of North Africa, and was first transmitted (we believe) to Europe by the English Consul at Bassora. It was soon adopted by several European surgeons, amongst whom Dieffenbach may be named. Many experiments have been made to find the substance most proper, and generally plaster of Paris has been adopted. This is mixed with water to

the consistence of cream and *paid* over the limb—first thinly, and then adding to the thickness sufficiently to ensure strength, but not enough to unduly increase the weight of the covering. The precautions to be observed in its application are—when there are external wounds they are to be left uncovered; extension must be made very carefully during the application and until the plaster has *set*; it must only be applied when the swelling has subsided; and lastly, the finest plaster should be used, as that is the lightest and strongest.

In conclusion, we have but to add a notice of a suggestion lately made, not involving principles but merely material. Mr. Shee advises making tablets, by evenly spreading a hot mixture of whiting and glue to the thickness of from an eighth to three sixteenths of an inch upon linen cloth, and covering it with another cloth. This when cold is hard, but may be softened by passing a wet sponge over it, and in that condition it is to be applied to the limb. We have tried this carefully, and find that it does not adapt itself readily, and is weak and heavy compared with its bulk.

#### THE TREATMENT OF FRACTURES OF THE THIGH.

*Preliminary Treatment.*—We will assume that an injury has been received. If we are on the spot we may be called upon to superintend the removal of the patient to a house. This requires some care and attention.

For transporting patients there have been many machines devised, and if one were kept at each corner of the street we would probably send for it. As it is, we should have to look around for what would answer best of things at hand. Of these there are many from which our choice would be much affected by the individual article—sofas, couches, small bedsteads, hand barrows, doors, window shutters and large arm chairs. If the body of the femur is broken, the patient must be extended; if the neck, a large arm chair with a *deep seat* will serve us. Whatever he is placed upon should be well protected (if not already so) by mattresses, and the limb itself carefully supported by pillows, or old garments, or by straw, grass or leaves, if the accident has happened in the fields. If a chair is used, lash to the seat two poles passing under it, which will enable two persons to carry it with great convenience and steadiness, whilst a third walks by the chair to assist and comfort the patient. In the mean time let him alone as regards his clothing. Do not strip him to pry unnecessarily into the nature of the injury, for nothing can be done to benefit him until he is under more favorable circumstances.

Suppose him now within doors. We want as large, comfortable and cheerful a room as we can obtain for him. There is none below. How can we get him up stairs? He would slip off of the door or couch at the inclination they would have to be carried at, and they might not be able to pass the turns in the staircase. In this case let a person stand each side of the patient, facing him. The one on his right side puts his right arm around the patient's chest; the one on his left side his left arm, whilst the patient places his hands upon the outer shoulders of his sup-

porters, who thus each have one arm unoccupied with which they can hold the rail or otherwise assist themselves. Another assistant supports the pelvis (*not the thigh*), and a fourth takes charge of the lower limbs. Thus the weight of the patient is well divided; he is not in a constrained position or liable to jolts or jars.

If the staircase is narrow and assistants have not room each side of the patient, either place him directly upon the back of a very strong man who must creep up on "all fours," keeping his back very straight whilst another supports the lower limbs and steadies the patient, or he must clasp one around the neck, whilst a second supports the hip and a third the legs. It may be called an absurd supererogation that we should thus particularize, but we have seen as much pain caused and as much injury done to the patient in his progress from the front door to the chamber, as by the original accident.

In the mean time, whilst others are slowly removing him, we must prepare for his coming, so that no unnecessary delay may take place when he has arrived. Preparations should be made for obtaining a proper temperature in the room. The bedstead upon which he is to be placed should be tolerably wide. Not so wide as to prevent reaching to the middle from either side when we wish to attend to the dressings—nor so narrow as to prevent the patient changing the position of the other limb or putting it into a cool place. No one who has had the sad experience of being confined upon his back during the month of August would value lightly the last privilege.

He should lie upon a mattress—the newer and freer from hard spots and depressions, the better. Upon this a sheet is to be laid, over which a warming pan or bottle or pan of hot water must be frequently passed before putting the patient upon it. Make up the bed then as usual, with the necessary amount of clothing, and having done so, begin at the side upon which the patient is to lie (he must lie with the injured limb nearest the edge of the bed), and roll up evenly and in a long roll from the head to the foot of the bed all the clothing except the under sheet, leaving it thus rolled up at the distant side of the bed, so that when the patient is properly adjusted it can readily be unrolled again and brought over him.

We feel it here necessary to again apologize for our particularity, but we have seen a patient scarce recovered from the collapse into which the injury had thrown him, placed upon a cold bed, in a chilly room, and then fanned by the flirting of a large sheet "*a la chambermaid*," and of two blankets and a coverlet, each in turn sending a fresh chill through his already shivering limbs, whilst a surgeon stood by to whose surgical erudition and skill it would be but our duty to bow most submissively, but who had forgotten the first aphorism of Hippocrates and his charge about "*ta êrōthen*."

Lastly, whilst putting the patient to bed, that is between the chamber door and the bedstead, his clothing should be taken off. He could not spare it sooner, and we do not wish it to soil the bed. About this we shall only say that undressing in fractures of the thigh, if care is taken,



may be done without pain to the patient and without ripping or tearing a single article of dress; even the boots of the injured limb may be drawn off if an assistant will first grasp the leg firmly just below the knee.

### Mechanical Treatment.

*Fractures of the Upper Extremity of the Femur.*—If the body of the femur is broken our diagnosis is easily made, but if the injury has been received at either end we may have some doubts as to its precise nature. We do not feel called upon to enter into a disquisition upon diagnosis, but as the means sometimes used to obtain information may affect our mode of treatment and the result to the patient, we wish to say a few words upon this point. The injuries with which intercapsular fractures of the neck of the femur may be confounded, are severe contusions, dislocations and fractures of the edge of the cotyloid cavity. Besides several others, the most marked diagnostic signs are, position of the limb, shortening, crepitus, and

FIG. 1.

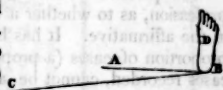


FIG. 2.

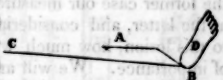
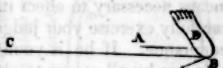


FIG. 3.



those furnished by rotation. It is now well established that the toe may be turned in. This Paré first mentions, and Sabatier tries to explain away his meaning, but Petit (J. L.) also mentions it; and to remove all doubt, in forty-two cases of this injury reported by Robert Wm. Smith in the Dublin Journal for Sept., 1840, it existed in two. Nor does it seem unreasonable. Let the line A B (fig. 1) represent the neck of the femur as we look down upon it perpendicularly from above. A the head, B the trochanter, C B the direction of the traction of the glutei and other *evertors* of the toes, D the foot. If A B is broken, B will be approximated to C by the traction of the muscles as in fig. 2, but the same violence that produces the fracture may throw the broken end *behind* the line of traction, and then the approximation of B to C will invert the toe as in fig. 3.

The shortening sometimes does not exist, and when it does it may be the symptom of an injury comparatively little known—fracture of the edge of the cotyloid cavity. Crepitus is generally present, though Boyer says he never could produce it; but it will also exist with the last-mentioned injury. Our most unequivocal sign is that furnished by placing one hand on the trochanter and rotating the limb. If the whole length of the neck is still the radius upon which the trochanter revolves, it will of course pass through the arc of a larger circle than if it is broken and but a part of it forms that radius. But even this requires tact, for in fracture of the cotyloid cavity the trochanter is not prominent, and may appear not to revolve through so large a circle as it ought.

But, as we have just said, it is not our province to enter into the question of diagnosis, we only wish to insist upon the point that the surgeon

is not to extend and let go the limb—to raise it and lower it, or rotate it, except very gently, for these motions would give no wholly unequivocal sign, but might do such mischief as would greatly lessen our chance of making a good cure—and for the following reasons :—

If but few of the fibres of the capsular ligament are torn, the remaining part of the neck and of course the limb is held in its place against the action of the powerful muscles drawing it up. But if the violence has already ruptured the whole ligament, or if after its having ruptured part we subject the limb to such motion as will rupture the remaining fibres, we do an irreparable mischief, giving our patient a limb three or four inches shorter than the other, instead of only an inch or an inch and a half.

Having ascertained that it is an intercapsular fracture of the neck of the femur, what treatment should we adopt? First let us see what we can reasonably expect to accomplish.

The question which has engaged in controversy the greatest of our profession, as to whether a bony union ever takes place, has been decided in the affirmative. It has been proved beyond question that a very small proportion of cases (a proportion which as yet, from the small number of cases recorded, cannot be accurately determined) thus unite. Shall we then attempt to produce a cure, or only assist nature in palliating the condition of the patient, for each aim will require a different treatment? In the former case our measures will be much more rigid and irksome than in the latter, and considering the age of the patients generally subject to this lesion, how much we should subject them to becomes a question of importance. We will answer these questions dogmatically thus.

If the patient is old—over 60—it is true you may produce a bony union,\* but the chance is so small that it is unjustifiable to resort to the means necessary to effect it. If he is over 45 but under 60, you must carefully exercise your judgment as to his general health and powers of endurance. If he is younger than 45, and no confirmed diathesis† forbids, try by all means to obtain a bony union.

Where bony union is not attempted, the treatment advised by Sir Astley Cooper is decidedly the best. One pillow is placed under the whole length of the limb, and another, sufficient to flex the knee to an agreeable degree, is put under that joint crosswise. When all inflammatory symptoms have subsided, let the patient be transferred during the day time to a lounge chair—one with the back at a great inclination, in order not to flex the thigh too much upon the pelvis. When all tenderness is gone, let the patient have crutches and take as much exercise as is comfortable. At the end of about two months a cane can be substituted for crutches. Where the limb is much shortened, the shoe worn upon the foot of that side must have a thicker sole than the other.

If we decide to make an effort for bony union, Desault's splint as modified by Dr. Flagg is to be used, with the addition of a bandage

\* One case is given in which the patient was 60 years old.

† Cancerous, for instance.

around the thigh and pelvis over (not above) the trochanter. This bandage should be made of one thickness of strong linen, three inches wide and lacing with eyelet holes in front. A duplicate should be provided to replace it whilst being washed, when soiled by the excrements.

We prefer the straight extension to that of the inclined plane of Sir Astley Cooper, because it is in more direct antagonism to the force we contend with. It is true that the inclined plane somewhat relaxes the psoas, iliacus internus, and the muscles on the anterior face of the thigh, but it leaves the glutei, gemelli and obturators unprovided for, and these it must be recollected are very strong, and, when the limb is flexed, act to great advantage—fully enough so to counteract the partial weight of the hips which would then be the only counter-extending force. As, however, the ex-

extending force. As, however, the extended position is very irksome, as soon as we can safely do it—say in twenty days—we would replace the splints first used, by those of Dr. Rowe or some after that type (selecting, as common sense would dictate, the simplest and lightest), but still keep the patient in bed and suspend the limb. At the end of six weeks, passive motion must be given to the joint, and in two more the patient may sit up in a chair with the limb still suspended, or may walk with crutches, letting the limb hang, but not bearing upon it. In ten weeks, exercise may be very carefully and gradually commenced. The periods we mention may seem long, but the low condition of vitality of the part requires a greater length of time for reparation, and in this particular accident we would rather err on the side of confining our patient too long, than subject him to any risk of repeating the injury and making its consequences irremediable.

In extra-capsular fractures of the neck, we must in all cases attempt to obtain bony union; and with this view, as the conditions affecting our choice of splints are the same as in the last, our treatment would be the same, shortening the periods mentioned one fifth.

In fractures of the neck complicated with fracture of the trochanter, or with the impaction of the superior fragment, we have a very much graver injury than in the two last. Violence causing either of these

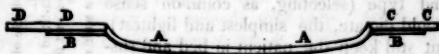


**Fig. 4.**

conditions would of course produce great local trouble, and for this we must provide in our treatment.

We would still adhere to Desault's modified splint, with this additional modification. During the first four days, whilst for evident reasons it would be unadvisable to apply any splint, let a blacksmith make out of a 1-4 inch steel rod an ellipse 7 inches long and 4 broad, having two projections at each end about 4 inches long and  $2\frac{1}{2}$  apart (fig. 4). These projections must be flattened and perforated with holes to receive the screws that are to fasten the ellipse to the wooden part of the splint. The object of this ellipse is to occupy the place of that part of the wooden splint which would lie against the trochanter and neighboring injured soft parts. To the upper and lower end of it are to be attached by the projections, enough wood of the usual thickness and width to eke out the proper length of the splint. We can thus, without removing the splint, get readily to the injured part what leeches, fomentations, &c., may be necessary. As a precaution against the metal bearing in the slightest against the soft parts, the ellipse may be curved upon itself in the direction

FIG. 5.



Same reference as in the last figure.

of its length, whilst the wooden splints where they join it must be well protected by compresses. As in the previous cases, as soon as is admissible (a period for which, in an injury like this, there can be no general rule), this extension apparatus must be replaced by a demi-flexed suspended splint.

The diagnosis of fractures of the trochanter is difficult, and they are equally difficult to treat. The fragment we have to act upon is very small, and imbedded in a mass of muscle further increased by tumefaction. No definite rules are given by writers for treatment of this injury, and our own experience tells us nothing. The evident course is to bring down the trochanter, drawn upwards and backwards, as far as possible, and confine it by a proper distribution of compresses and rollers. No case is recorded where a perfect cure was effected, though the efficiency of limbs subjected to this injury does not seem to have been greatly lessened.

[To be continued.]

#### MERCURY AS A REMEDIAL AGENT.

By Daniel Holt, M.D., New Haven, Ct.

(Communicated for the Boston Medical and Surgical Journal.)

THE remarks which were made in regard to arsenic, in a late No. of this Journal, will to some extent apply to mercury, and are perhaps equally important, as this is an article in almost universal use by the profession, and at the same time is one which is liable to abuse, and against which there has ever existed a prejudice both in and out of the profession. Every powerful agent, capable of doing much good when properly

used, is equally liable to do immense injury when inordinately administered, or in cases to which it is not appropriate. Still this is not a sufficient reason for its condemnation; but should rather excite the conscientious and enlightened physician, better to discriminate in its application to disease. The various preparations of mercury are so different in their effects upon the system, that they might in general be considered as entirely different articles, each appropriate to certain morbid conditions of the system: but there is one prominent and important effect, and the one for which mercury is most valued, which may be obtained from several of them, although calomel and the mass hydrarg. have been more commonly employed for this purpose. This is its alterative, deobstruent, or peculiar *specific effect*, and by virtue of which, a great variety of diseases, both acute and chronic, speedily yield to its influence. Now this effect, so desirable, so efficient for the removal of disease, and so harmless when we can *just hit the mark*, as it were, will be acknowledged by every one to be often difficult to obtain at all, and will be sometimes accompanied with unpleasant, alarming, and even fatal effects. Wood and Bache, in the United States Dispensatory, say, "it is given far too empirically." We say so too, or rather it is given far too indiscriminately, without the particular conditions of the system, and the peculiarities of the disease, being sufficiently taken into the account. It is a convenient remedy, and easy of administration, and there are few diseases in which it is not recommended, or to which it may not be appropriate in some stage; and hence, perhaps, from too little discrimination in its use, it has become too common in the ordinary routine of practice.

There are many morbid conditions which have long been acknowledged by the profession as resulting from a too free use of this article, or from its use in diseases or conditions of the system in which it is not appropriate—effects which are very unfortunate for the reputation of the remedy, and which it is certainly desirable to avoid. Among these unhappy results, may be mentioned mercurial erythema, rheumatism, ulcerations in various parts, and gangrene, especially about the face and mouth, several cases of which have recently been reported in this Journal, and pretty well substantiated as the effects of this article. It is an important inquiry whether these effects are owing to the use of an impure preparation, or whether the remedy is given in inordinate quantities, or in a condition of the system not appropriate. The former may sometimes be the case, though I apprehend not ordinarily. I think it is sometimes owing to the administration of an excessive quantity; but more commonly to its use in a condition of the system where it is not beneficial, where perhaps the system is more susceptible to its injurious effects, even than in health; and not being appropriate to the diseased condition, it becomes a poison to the sensible organs. There is another effect more common, and which should be viewed differently from the above; I refer to ultimate salivation. This effect is not properly an unnatural action of the remedy, but one which is often carried to such an extent as to be very inconvenient and often injurious; it is an advanced stage of its specific effect, and holds, I think, something like the same

relation to it, that ultimate narcosis does to the anodyne effect of opium, or other narcotics; and although it often banishes a disease from the system at once, its own effects are as much to be dreaded. Like a too powerful combatant, it not only vanquishes its foe, but destroys also his habitation. The peculiar and specific action of the remedy is generally believed to be sufficient to affect the disease in appropriate cases, without ultimate salivation, and perhaps all the good might be experienced were we to stop just at the point where the symptoms of the mercurial influence begin to be manifested. When a severe salivation has resulted from an ordinary cathartic, or a few small doses of mercury, as is often the case, we are apt to conclude there is too great susceptibility, that it is not the appropriate remedy, and should not have been used. This may sometimes be the case; still oftener, probably, these are the cases which are peculiarly susceptible to its action, and the medicine has been carried too far, or administered too freely. We are certainly deficient, in not having better defined land-marks, to guide us in our therapeutic application of so important an agent, so as to enable us to obtain the happiest results, and at the same time avoid unpleasant consequences.

It is well known that calomel is recommended both for its cathartic and alterative effects, in a great variety of diseases, both acute and chronic, and in unlike conditions of the system; especially is this the case in diseases of an atonic character, and in inflammatory affections. It is an almost universal remedy in the cure of inflammation; yet it may be given in small doses, or even large, and retained in the system, and thus continued for a long time, in acute diseases of a purely entonic character, without reducing that entony, or producing any symptoms of salivation. Indeed it is very doubtful whether its specific effect can be produced in this condition; and were we to depend entirely on this article in such cases, we should be disappointed in it. But if by other means the high excitement is reduced to a certain point, we shall get the specific effect of the mercury, and sometimes just at a time that might lead us to suppose that the mercurial symptoms were the cause of the reduced action, but really in consequence of it. It is also difficult to obtain its specific effects in diseases of pure atony or debility; and hence in such cases it is not an appropriate remedy. Indeed in diseases either decidedly entonic or atonic, where there is little disturbance of the glandular system, and consequently of the secretions, mercury has more reputation than it deserves; here, in some constitutions, it is liable to produce some of its unnatural effects. It is in another grade of action that it is peculiarly appropriate—a grade of action between that of entony and atony; it is that state of the system which ordinarily attends the bilious type of febrile and inflammatory diseases, with a general derangement of the secretory and absorbent system, with morbid secretions from the mucous surfaces and chilopoietic viscera, with a yellow tinge on the surface, and with a pulse which does not feel as though the blood were all fibrine, as the French pathologists would say. This is the grade of action and condition of the system, in acute disease, likely to be susceptible to the speedy specific effects of mercury, and where it is most appro-



appropriate. It is thus an admirable expectorant in pneumonia, a speedy febrifuge in bilious remittent or continued fever, a good alterative in visceral derangements; it arrests the morbid and vitiated secretions in diarrhoea, dysentery, cholera, &c.; in short, when strictly appropriate, it answers a variety of indications, by changing the action of the system, and restoring the natural functions, without any other sensible effect than a cessation of the morbid and restoration of the healthy functions; and when so administered, it is one of the most valuable articles in the materia medica.

In chronic diseases which are cured by its alterative effects, the same rule, to a certain extent, will apply, and the same susceptibility to its action is sometimes witnessed. We have seen a most distressing case of salivation follow the use of two blue pills, and frequently from an ordinary mercurial cathartic. In these cases we should use great caution. It is unquestionably the case that much prejudice has arisen from a wholesale and injudicious use of this article, and we are still not well instructed as to its application in every case. We have much yet to learn, respecting the application of our most efficient remedial agents, to meet the different and varying morbid conditions in disease, and to cure in the most effectual manner.

If it is true that injurious and fatal effects, as asserted, have resulted from the too free and indiscriminate use of this article, it certainly is a great misfortune; it will of course be seized upon by quacks, who denounce everything, the worth of which they cannot appreciate. It belongs to the members of a liberal and enlightened profession either to point out a more effectual and safe mode of application of powerful agents, or to bring science to our aid in preparing and substituting those agents which will be as effectual to cure without the attending evils.

#### ADHESION OF THE EYELID—OPERATION.

[Communicated for the Boston Medical and Surgical Journal.]

NATHANIEL MAYO, a healthy, robust farmer, aged about 40, was at work boiling down the lye of common wood ashes to a substance called "black salts" (which, when subjected to a great degree of heat, and melted, on cooling becomes common potash). The salts became encrusted on the kettle in which he was boiling it, and which were very hot. With a kind of chisel he was removing them from the kettle, when a piece of the hot salts was forcibly driven into his right eye. It caused excruciating pain. He ran instantly to a brook and washed his eye for some time. It felt better, when he tied a handkerchief around it, and went to work. About a week after, on examining it, the lower lid was found adhering through its whole extent to the globe of the eye. After suffering the pain and inconvenience for about a year, he sought relief, and I performed the operation in the following manner. He was placed in a good light, his head resting firmly on the back of a high chair. An assistant standing behind him, placed a finger in each corner of the eye, and

kept it still. With a sharp-pointed scalpel the lid was divided from the globe, the assistant separating them as divided. The edge of the knife was kept towards the lid, which was dissected clean until it was wholly separated from the globe. There was then on the globe a loose, cellular, fleshy substance, which was removed by taking hold of it with a pair of small forceps and cutting it off with the knife, until all that could be raised with the forceps was removed—leaving a part of the globe still covered by a red fleshy substance, which was very vascular, bleeding quite freely. The scalpel was then *drawn across its edge*, touching the fleshy substance lightly, and this was repeated until the whole was *scraped off*, leaving the globe of the eye perfectly natural in its appearance.

In the case of adhesion of the lid to the globe of the eye, I have seen the operation performed by simply dividing the lid from the globe—but it wholly failed, the divided parts again uniting. I was therefore very careful to *remove or destroy* all the former bond of union. I then, with a blunt probe, passed a piece of very fine linen, dipped in a weak solution of sac. sat., between the divided globe and eyelid, bound up the eye so as to prevent any motion of it, and directed an antiphlogistic course. The linen was kept in the eye one day, and in about ten days the cure was complete, without any further trouble.

E. S. PHELPS.

Middleton, Mass., August, 1845.

#### NEW INSTRUMENT FOR CONGENITAL FISSURE OF THE SOFT PALATE.

By C. H. Stearns, Esq., Surgeon.

A NEAR relation of the writer of this communication had twice undergone the operation of staphyloraphy, and had also submitted himself several times to the hands of dentists, who professed to be able to close up the fissure by the adaptation of mechanical contrivances. These measures not being attended with the slightest benefit, the writer was induced himself to attempt something for his relief; and at length conceived the plan of an instrument, which, from its proposed shape, position, and mobility, seemed likely to perform, to some extent at least, the functions of the natural *velum palati*, or soft palate. After a length of time, a piece of mechanism was produced, the application of which has been attended with satisfactory results. As it is probable that something of the kind may prove equally useful in other cases, a brief description of the affair is here offered.

A gold plate is first fitted to the roof of the mouth, in the manner practised by dentists, which is to serve as the foundation or support of the mechanism intended to supply the want of the natural soft palate. To the upper and posterior margin of this plate, a flat spiral spring is attached, which, with the delicate and permanent elasticity peculiar to that kind of spring, admits of easy and constant vibrations backwards and forwards. To the other and posterior extremity of this spring, an artificial *flexible velum* is attached. This part of the instrument is constructed of Mr. Goodyear's preparation of caoutchouc, which, having the

property to resist the action of both oils and acids, and at the same time sustaining a high degree of heat, has proved well adapted to the purpose. In attempting to describe the artificial velum, we must, for want of better terms at present, designate its principal parts as its *body* and *wings*. The body of the velum consists of a lamina of the caoutchouc, of a somewhat triangular form, and of the same size and shape as the vacant space it is intended to occupy, that being the plane which would be indicated by imaginary lines connecting the opposite sides or columns, and subtending the vertical angle of the fissure, at which point the velum is connected to the posterior extremity of the spiral spring. This lamina, constituting the body of the velum, is divided into three pieces, which overlap each other. The wings project obliquely forwards and outwards from each lateral margin of the body, and being made to conform to the shape of the columns or sides of the fissure, are seen to rest upon their inner and anterior surfaces, thus covering a portion of the soft parts which constitute the boundaries of the posterior fauces. In like manner, along each lateral margin of the body, there is (in mechanical phrase) a flange, projecting obliquely backwards and outwards, and extending along down the posterior surface of the column, it terminates at the inferior angle of the velum. In this way the wing and the flange, on the same side, together form a groove fitted to receive the fleshy sides of the fissure. As the preparation of caoutchouc made use of presents a smooth surface, and yields readily to the slightest pressure, it is found to permit the contact and muscular motion of the surrounding soft parts, without causing any irritation. When, therefore, the sides of the fissure tend to approximate, as in deglutition, gargling the throat, or the utterance of some of the short vowel sounds, the three parts of the body of the velum slide readily by each other, thus diminishing the extent of the exposed surface, and thereby imitating, to some extent, muscular contractile action, the force being derived from without, and not, of course, contained within the instrument. During the effort made in speaking, the surrounding muscular parts embrace and close upon the artificial velum, and press it back against the concave surface of the pharynx. The passage to the nares being therefore temporarily closed, the occlusion of sound is accomplished, and articulation made attainable, as the voice or sound, as it issues from the glottis, is thereby directed into the cavity of the fauces, and confined there long enough to receive the impressions made upon it by the tongue, lips, &c., in the formation of the consonant letters.

The foregoing description may not be thought sufficiently specific; but some considerations preclude, at the present time, a more detailed account, which, to be intelligible, would require the aid of figures to illustrate the mechanism of the instrument. Even that might fail to satisfy one much interested in the subject, without an opportunity being offered of witnessing actual results derived from its application.

Though the instrument, after having been adapted in the way above described, was found materially to improve the speech, yet it was still considered defective, and not admitting of general application, until other important requisites had also been attained; for it was also necessary to

make it so yielding as not to irritate the sensitive and restless parts with which it must come in contact ; so that it might at all times be retained in place without inconvenience, while eating, drinking, or during sleep. At the same time, it was required to possess a degree of strength and firmness sufficient to sustain the force of any sudden shock, as in coughing, sneezing, or laughing, without the risk of being displaced, or in any way deranged. Durability of the substance composing the velum was also regarded as a point of the first importance to ensure its usefulness. The material made use of, as prepared by Mr. Goodyear, and managed according to his instructions, was found (after some practice in the manipulation necessary to bring it to the shape required) to resist the combined action of all the decomposing agents to which it must become subjected—viz., motion, animal heat, the moisture and acids of the mouth, and the oils of the food. The means afterwards devised to keep it in order, freeing it from deposits, and thus preventing fœtor, consist in the occasional use of some alkaline or aromatic preparation.

We would now willingly add some account of the elocutionary practice and discipline resorted to in order to obtain the full benefit of the instrument after its adaptation ; but this may well be deferred to a future paper, more space having already been occupied, than was at first intended—the purpose of this communication is indeed merely to announce what had thus far been accomplished.—*London Lancet.*

#### ON A SOURCE OF ERROR IN SUPPOSED INFANTICIDE.

By James A. Sewell, M.D., Quebec.

THE following case is, I conceive, interesting in a medico-legal point of view, particularly when taken in connection with the coroner's inquest lately held at Isleworth, Eng., on the body of Ann Pendry's child, the particulars of which are reported and ably commented upon by Wm. Ryan, M.R.C.S.E., in the *Lancet* for June 21st, 1845. I may merely here mention, for the benefit of those who have not seen the report, that the above-named Ann Pendry was delivered of a child in a privy, that the child was shortly after found dead at the bottom of the privy, and that a verdict of wilful murder was returned by the coroner's jury against the unfortunate mother.

CASE.—Mrs. B., ætat. 30, married, and pregnant with her first child, was seized during the night of the 20th inst. with labor pains. Being a refugee from the late fire, she occupied part of a garret in which two or three other families and some young men were sleeping. Feeling a natural delicacy, at being confined under such circumstances, she suppressed her cries until daylight, when she descended into a lower apartment, in which resided a woman who had been recently confined by me, to whom she detailed her feelings, requesting, at the same time, that some warm water might be given her to "sit over," to relieve what she described as a great pressure at the lower part of the bowels. She had hardly seated herself upon the edge of a rather high chair, when a severe

bearing-down pain seized her, and before any assistance could be afforded (though one or two women were in the room) the child was forcibly expelled, and fell head-foremost on the floor, being killed upon the spot.

I should have mentioned that I was sent for immediately after Mrs. B. had descended into the lower chamber, but did not arrive till about twenty minutes after the delivery. The child, which was a remarkably fine one, was perfectly dead, and still attached by the cord to the placenta, which came away shortly after the infant.

In the above case not the *slightest suspicion* of criminality can attach to the mother; but, suppose the delivery to have taken place under circumstances precisely similar to those in Pendry's case, though there would be ground for a medico-legal investigation, still, with the fact brought before them by the coroner, that cases such as I have now reported do not unfrequently occur, a jury should be extremely cautious how they blast a poor creature's character by returning such a verdict as that recorded against this unfortunate woman.

I am happy to have it in my power, by a recent case in point, to support the view taken by Mr. Ryan.—*British Amer. Med. Jour.*

[In connection with the above interesting case by Dr. Sewell, the two following cases are copied from late Nos. of the London Lancet, the first of which is related by J. B. Prowse, Esq., a surgeon of Clifton; and the other by Dr. A. Blacklock, of Dumfries.]

One positive fact is worth more than all the negative evidence which can be brought forward on any subject, and for this reason the subjoined case is narrated. When a pupil, I was engaged by a poor woman to attend her during her accouchement; she was a native of Ireland, and a remarkably fine and well-formed person. She had already borne two children. On the day of her delivery I was requested to call on her, for she *thought* her confinement was near at hand. Her attendants said she was in no pain, but that she appeared uneasy. I waited on her, and found her on the bed, smiling, and expressing a hope that she had not summoned me unnecessarily, but that, as she never suffered much in labor, I would excuse her if she was wrong. On examination, I was surprised to find the head of the child in the upper part of the vagina, and was puzzled to account for there having been no pains to lead to the suspicion of the real nature of the case. No sooner was my hand withdrawn, and my back turned to speak to the attendants, than there occurred one single effort of the uterus, and the child was in the world. I never shall forget the circumstance. To say that there was pain, would be wrong. I believe what the woman stated to me as truth at the moment, that "she scarcely experienced any uneasiness." Not to occupy any more space of your most valuable journal, I will merely say, in conclusion, that on reading the report of the case at Isleworth, I saw how possible it was that the woman should be innocent.

Now, that facts are so uniformly preferred to theories, permit me to contribute to your useful pages the following case, which occurred to myself so long ago as Feb. 26th, 1823. At about midday I was hur-

riedly called to the wife of a clergyman, who had been suddenly taken in labor of her second child. She had been sewing, and occasionally reading, in the parlor, for an hour before, but without suffering any pain or uneasiness to lead her to suppose that labor had commenced, or was even threatening, when in an instant she experienced a strong bearing-down pain, which induced her to get upon her legs, and endeavor to walk into an adjoining bed-room. But before she had proceeded more than a few yards, *another pain threw the infant upon the carpet.* The cord was ruptured close to the umbilicus, but fortunately did not bleed from the foetal portion. The placenta was partially detached, and the most alarming flooding immediately followed. By introducing my hand, irritating the uterus, and carefully extracting the after-birth, administering brandy freely, and applying cold water and well-adjusted pressure to the abdomen, my patient soon rallied, and made a good recovery. I may observe, that the infant was not injured by the fall; indeed, the fall must have been much lessened by the cord.

## THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON, AUGUST 27, 1845.

*The Butler Hospital for the Insane in Rhode Island.*—An apology is due for not having sooner noticed the Report to the Trustees of the proposed Lunatic Hospital in Rhode Island, by Dr. Bell, of the McLean Asylum, whose good judgment and taste are both apparent in the report. This newly projected institution is to be located at Providence. Funds exceeding \$130,000 were received for the purpose the past year, including a legacy of \$30,000 from Mr. Brown, and \$40,000 from Mr. Cyrus Butler. The proposed institution takes its name from the last-mentioned donor. Three miles from the city of Providence, 120 acres of land have been purchased. With a desire of having the very best contrived edifice—one that shall embrace all the advantages known either at home or abroad—Dr. Bell was induced by the Trustees to visit Europe for the exclusive purpose of ascertaining what was best, most convenient and tasteful in this kind of architecture.

“Dr. B. sailed early in January last for London; after examining the various public and private metropolitan asylums, and the larger public ones to the south, he passed over to the Continent—remained a fortnight at Paris and its vicinity, and thence through Belgium, intending to visit the institutions on the Rhine. Receiving, however, such information as led him to the opinion that his short stay would not be most profitably expended in that direction, he returned to England and visited a very considerable proportion of the most recent and best asylums in Great Britain. Amongst those, to which, as the most perfect and best designed, he gave the most particular attention, were the Surrey, Northampton, Leicester, Nottingham, Lincoln, Wakefield, the two at York, Glasgow, Edinburgh and Belfast. Many of the earlier and unimproved asylums were visited during the



first part of his absence, but so little was found to remunerate him for the loss of time, that he devoted more of his attention afterwards to the details of such recently-constructed edifices as were acknowledged to contain the most recent improvements.

"The results of his observation were communicated in a Report to the Trustees of the Butler Hospital. The plan proposed is now in the hands of a competent architect for estimates and other practical points, and has not yet been fully determined upon. The intention is to proceed at once to carry forward the buildings."

It appears that the insane establishments in England, or, rather, British institutions, are now of two kinds, viz., the old and the new. The modern structures eclipse the first both in their internal arrangements, comfort and beauty. The old ones were located in towns, and therefore noisy and circumscribed; while the edifices of later times, stand off from the hum of the multitude, with ample grounds. The gloomy, severe, jail buildings are superseded by those of a light, airy appearance, and of an inviting character. Dr. Bell enters upon the details of the size of apartments, the method of warming, ventilation, &c., with the precision of one who feels his responsibility. Points of immense consequence in regard to the internal economy of these homes of the wretched are discussed with much ability. The following is a portion of the results of his investigations.

"In digesting a plan for the 'Butler Hospital' from my somewhat copious supply of materials (having been so fortunate as to obtain copies of the unpublished plans of a number of the best and most recent institutions), I have been compelled to adopt the conclusion that for our country and climate, a right line, with projections at right angles and at the centre, is the most convenient form. My opinion formerly was much in favor of separate buildings for the different sexes, and for the officers and offices of the household. There are certainly advantages in such a separation, but overruled by reasons of convenience and economy; particularly where it is designed to introduce the modern system of heating and ventilation. A most serious objection to the common quadrangular form, that patients from different sides are placed opposite and in view of each other, is obviated by the plan of having the kitchen and its appendages and the chapel over it, project between the two wings."

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*Nothing New in Surgery.*—If it is true that there is nothing new under the sun, it must necessarily be so in respect to surgery. Excavations at Pompeii have brought to light various instruments, which have been considered original inventions in our day, and as such are patented. Dr. Chandler, of St. Albans, Vt., relates the following anecdote, illustrative of the fact that the idea of originating any new apparatus or new principle in surgery, is quite if not wholly preposterous.

"Of course," writes the doctor, "you understand that a country surgeon of small pretensions, may not look for a great array of books on the shelves of his desolate study. Periodicals are few and far between; and the élite of the profession are not often included among his associates. Under such circumstances, several years since, I was much annoyed and mortified with the results of oblique fractures of the femur, in spite of all the contrivances I remembered to have heard or read of. I therefore set

about the labor of devising a fracture apparatus, which would prevent the shortening of the limb. It consisted merely of a platform, six feet long and three wide, on which to lay the patient, with joints, secured by hinges, at points corresponding with the hips and knees—care being taken that the middle portion should correspond with the length of the patient's thigh. That being accomplished, it was easy, by cushions and fixtures, for straps, &c., to remedy the evil. The results in two or three instances were so satisfactory, that in my very soul I thought myself the cleverest surgeon in all the country round. While on a visit at New York, soon after, and while walking the hospital in company with Dr. J. K. Rodgers, who, by the way, treated me very courteously and considerately, I could not resist the united promptings of self-complacency and compassion for suffering humanity, and so in the fulness of my heart, disclosed, in a patronizing fashion, to the doctor, my wonderful contrivance and my more wonderful success in curing fractures. It was an emergency the doctor was equal to; his politeness did not fail him, and after gracefully bowing his sense of obligation, he apologized by reminding me of the claims of his patients on his time, and gave me over to the guidance of a young gentleman whom he requested to show me through wards number so and so—where, to my utter consternation, I saw two or three patients with broken thighs, stretched on fracture beds, combining all the advantages of mine, with many others that I had never dreamt of. I did not stop to inquire the name of the inventors, nor how long they had been in use."

*United States Army Medical Movements.*—Assistant Surgeon C. McCormick ordered on duty in New Orleans, La., from Key West, Fla.—Surgeon A. N. McLaren assigned to duty temporarily at Ft. Independence, Boston Harbor, from Hancock Barracks, Houlton, Me.—Assistant Surgeon R. Southgate ordered from Ft. Gratiot, Mich., for duty at Military Academy, West Point, N. Y.—Assistant Surgeon W. Levely ordered to join Brigadier Gen. Taylor's command in Texas.—Assistant Surgeon C. E. Isaacs relieves Assistant Surgeon M. Mills at Ft. Niagara, N. Y., who accompanies detachment of Light Artillery from Baltimore, Md., to Texas.—Assistant Surgeon R. S. Holmes assigned to duty at Hancock Barracks, Houlton, Me.—Assistant Surgeon L. McPhail ordered from Plattsburgh Barracks, N. Y., on duty with Gen. Taylor's command, Texas.—Surgeon R. C. Wood ordered from Buffalo Barracks, N. Y., on duty with 5th Infantry at Jefferson Barracks, St. Louis, Mo., en route to Texas.—Assistant Surgeon I. Simons accompanies detachment of 2d Dragoons, ordered from Ft. Washita to Texas.

The following officers of the medical staff are also attached to General Taylor's command in Texas:—Surg. J. J. B. Weight, Assistant Surgeons B. Byrne and H. H. Steiner, from Florida, with 8th Infantry.—Surg. W. L. Wharton and Assist. Surg. G. Buist from Ft. Jesup, La., with 2d Dragoons.—Surg. N. S. Jarvis, Assist. Surg's J. R. Conrad and A. W. Kennedy, with 3d and 4th Infantry.—Surg. P. Craig and Assist. Surg. D. C. De Leon, with 7th Infantry. Their address is "To the care of the U. S. Quartermaster, New Orleans, La."

*Extraction of Teeth.*—Mr. Power, dentist, Stephen's Green, Dublin, has found it desirable, in the course of his professional duties, after the

extraction of a tooth, that the gum should not be closed, as the natural spreading of the adjoining teeth on either side of the tooth which has been extracted is thereby prevented. When the jaw has received injury, in the course of a rude operation, it is judicious to bring the parts into contact.—*London Lancet.*

**Medical Miscellany.**—Dr. Knight, of Monticello, Mo., writes that he has seen but one case of harelip in a black, but that was a double one, although long a resident of a slave State.—The circular of the Willoughby University, Ohio, exhibits the good condition of the medical department. In 1844-5, there were 126 medical students matriculated there.—At the meeting of the Farmer's Club, in New York, Dr. Underhill was of the opinion that nine out of ten of all western cattle had diseased livers. Dr. Archer delivered an address on the advantages and capabilities of Texas. Dr. Page, of Texas, showed that it was a country of great fertility.—A child was killed at South Boston by brandy, given by its parents as a remedy for worms.—The New Haven Herald states that the prize offered by the Connecticut Medical Society for the best essay upon Scarlet Fever, has been awarded to Dr. Ellsworth, of Hartford.—A circular of the Jefferson Medical College, announcing the lectures for 1845, has been published.—In the great fire at Smyrna, disastrous beyond all former ones, the English hospital was saved, but the Austrian was destroyed; by great exertion the Greek hospital was also saved, having three hundred patients in it at the time.—Cynthia Browning, the Kentucky giantess, died July 30th. She was seven feet tall.—Dr. V. J. Fourgeaud, of St. Louis, has become one of the editors of the St. Louis Medical and Surgical Journal: there are now three editors, viz., Drs. Linton, McPheeters and Fourgeaud.—Dr. Gross, of the Louisville, Ky., Medical Institute, is at Philadelphia, says Dr. Lee's Journal, superintending a new edition of his Elements of Pathological Anatomy.—Dr. E. S. Phelps, of Middleton, Mass., recommends filling a painful tooth, if hollow, with extract of belladonna, having several times afforded relief in that way.—A certain Dr. Christian, of Tennessee, is accused of the very unchristian act of shooting a political opponent.—Gratuitous lectures on surgery are delivered in October, at Lexington, Ky., where the medical department of Transylvania University is located.—A decoction of the black ash bark is the last-announced remedy for hydrophobia.—The Society of American Dentists have unanimously declared, in convention, that filling teeth with amalgam is a dangerous practice.—A perfect skeleton of a mammoth, the only one ever exhumed entire, is said to have been found seven miles west of Newburgh, N. Y. The skull, alone, weighs 700 pounds.—A pest house recently erected at Pittsburgh, Penn., has been demolished by a mob. The people wish to have smallpox at home, it seems, and not in the public accommodations.—Smallpox has appeared at Millbury, Mass.—Dr. Silas Fuller, an eminent physician of Hartford, Conn., is slowly recovering from a sickness, which it was feared, at one time, would terminate fatally.

Number of deaths in Boston, for the week ending Aug. 23, 53.—Males, 36; Females, 22. Stillborn, 3. Of consumption, 6—disease of the bowels, 12—erysipelas, 1—cholera infantum, 4—hooping-cough, 2—old age, 3—teething, 2—disease of the brain, 1—dysentery, 1—delirium tremens, 1—scarlet fever, 2—infantile, 2—accidental, 1—bronchitis, 1—child-bed, 1—intemperance, 1—dropsy, 1—typhus fever, 1—croup, 1.

Under 5 years, 35—between 5 and 20 years, 4—between 20 and 60 years, 12—over 60 years, 2.

**Contagion of Typhoid Fever.**—M. Gaultier de Claubry, in a communication read before the Academy of Medicine, Paris, endeavored to prove—First, that typhus and typhoid fever (dothineritis) are identical. Secondly, that typhoid fever, like typhus, is contagious. These propositions M. Gaultier Claubry supported by numerous arguments drawn from his personal experience. He had within the last few years met with eight cases of undoubted contagion in his private practice, the patients being all in easy or wealthy circumstances. In concluding, he reminded the Academy that his views on this subject were also those of MM. Chomel, Louis, Andral, Moreau, Jolly, and many others.

M. Rochoux disagreed in every respect with M. Gaultier de Claubry. In his opinion, the diseases were perfectly distinct, differing in their causes, their symptoms, their pathological anatomy, and their treatment.—*London Lancet*.

**Professor Campbell's Statistics of Midwifery.**—These statistics are founded on 5,754 deliveries which have occurred for some years in the author's private practice, and such as have been under the management of his pupils, as also those for which he has been consulted by his professional friends.

The oldest parent among the males was 77 years of age, and his wife produced 13 sons and 3 daughters—two of the latter being by a former husband; when her 16th child was born, she was in her 41st year. In 5,754 deliveries, there were but 5 male parents below the age of 20; 4 at 18, and 1 at 19. Among the female parents, 2 only were delivered at the age of 50; 3 at 47; 9 at 46; 15 at 45; 20 at 44; 21 at 43; 37 at 42; 28 at 41; 124 at 40; 153 at 39; 87 at 38; 35 at 37; 7 at 36; and 2 at 35. Of the whole number of female parents referred to, each of 31 mothers produced 12 children; 14—13; 5—14; 1—15; and 3—16 children.

In 5,754 deliveries, there were 2,901 male, and 2,219 female children; the sex of the remainder had not been recorded.

There were, in 400 first deliveries, 244 males and 160 females, including 3 twin births, of which 1 was a female and 5 were male infants.

In 116 illegitimate births, there were 65 male and 52 female infants, including one twin delivery, in which there was one of each sex.

By 153 males and females of equal ages, 318 males and 245 females were procreated, including 3 twin births, of which 2 were male and 4 female infants.

By 340 fathers, from 3 to 6 years older than their wives, 795 males and 351 females were produced, including 5 twin cases, in which there were 3 males and 7 females.

By 143 fathers, who were from 7 to 10 years older than their wives, 368 males and 289 females were produced, including one twin birth, of which both were male infants.

To 112 fathers, who were from 11 to 36 years older than their wives, 267 males and 194 females were born, including 1 twin birth, in which there was one infant of each sex.

To 117 husbands, who were from 8 to 17 years younger than their wives, 285 males and 214 females were born.—*Northern Journal of Medicine*, June, 1845.